



General Electric Turbine & Auxiliaries

Section 7.4

Learning Objectives

1. State the purposes of the turbine & turbine auxiliaries.
2. Identify the sources of heating steam to the Moisture Separator Reheaters (MSRs).
3. State the purpose of the following Turbine valves.
 - a. Stop Valves
 - b. Control valves
 - c. Combined Intermediate Valves.

Obj-1 The Purposes of the Turbine & Auxiliaries:

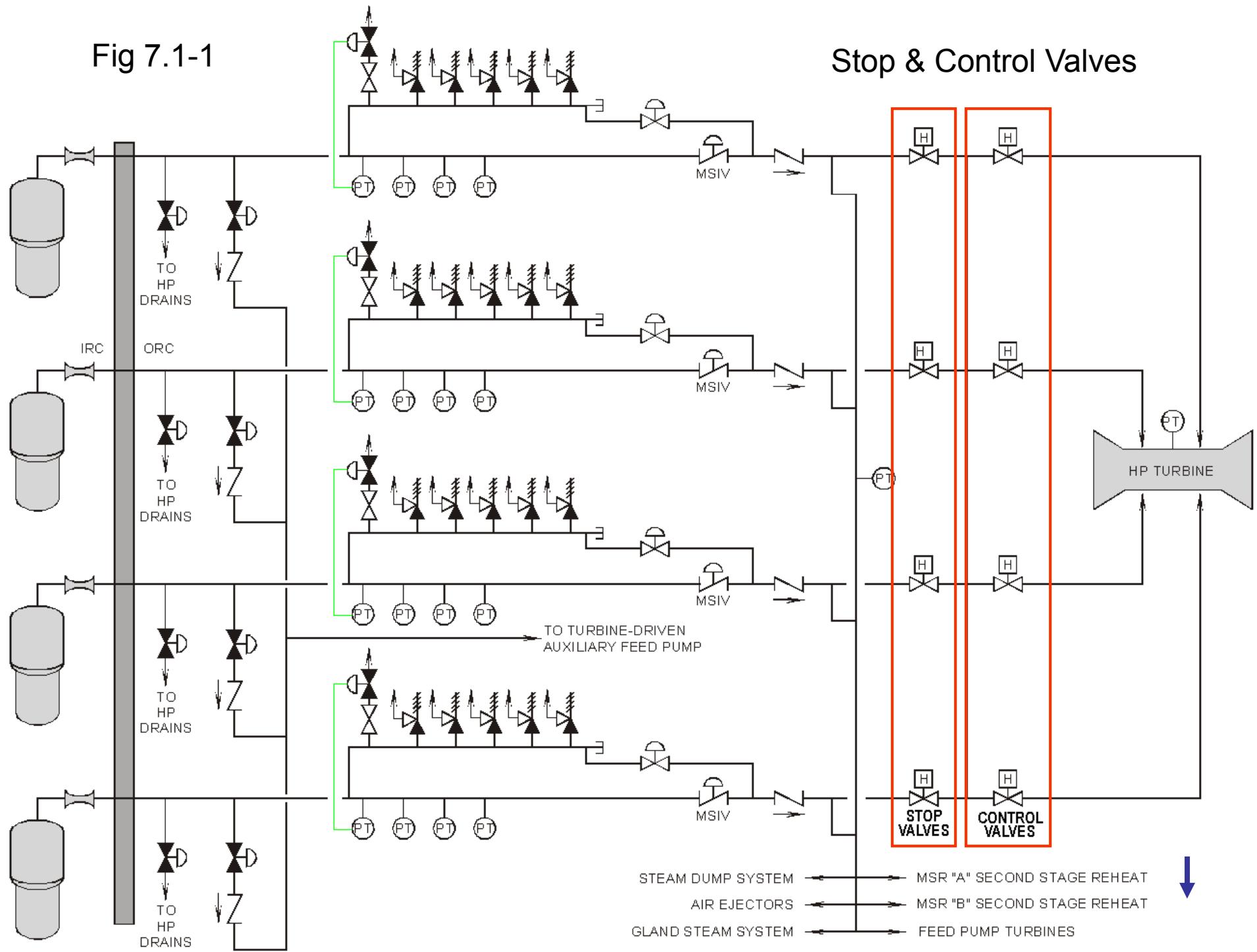
(7.4.1)

1. To convert the thermal energy of the steam to mechanical energy to turn the main generator,
2. To provide turbine shaft sealing,
3. To provide turbine/generator lubricating oil, and
4. To provide dry, superheated steam to the LP turbines to reduce moisture erosion and increase plant efficiency.



Fig 7.1-1

Stop & Control Valves



Stop Valves (7.4.2.2)

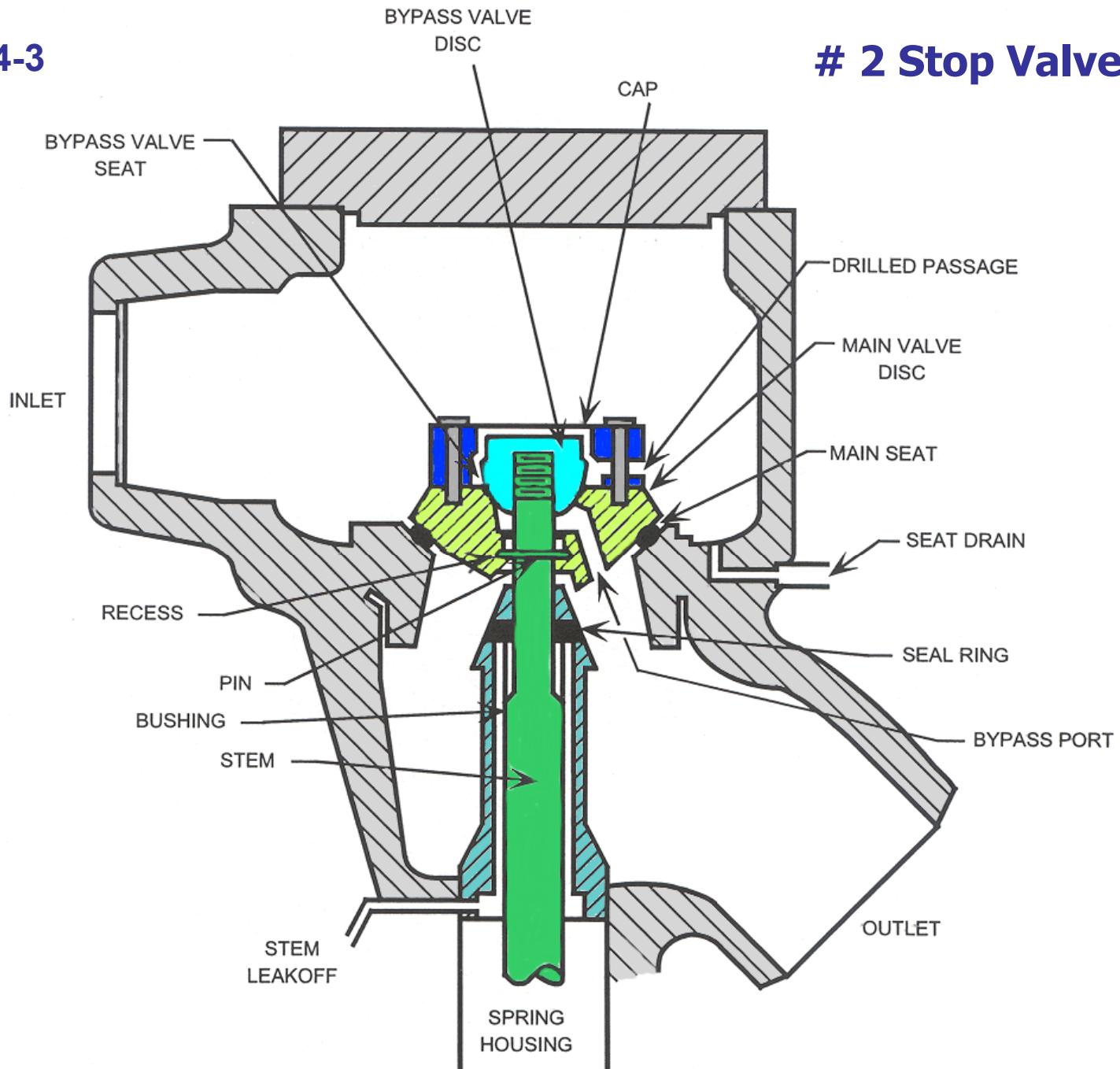
Purposes:

- Supply steam to HP turbine.
- Close rapidly to isolate steam to HP turbine on turbine trip.
- No. 2 Stop Valve provides warming steam during turbine startup.



Fig 7.4-3

2 Stop Valve 28"



Control Valves (7.4.2.2)

Obj-3b

Purposes:

- Controls Turbine speed & load based on mode of control from Electrohydraulic Control (EHC) system (Chapter 11.5).
- Will auto close on Turbine trip signal to provide redundant steam isolation.

Fig 7.4-4

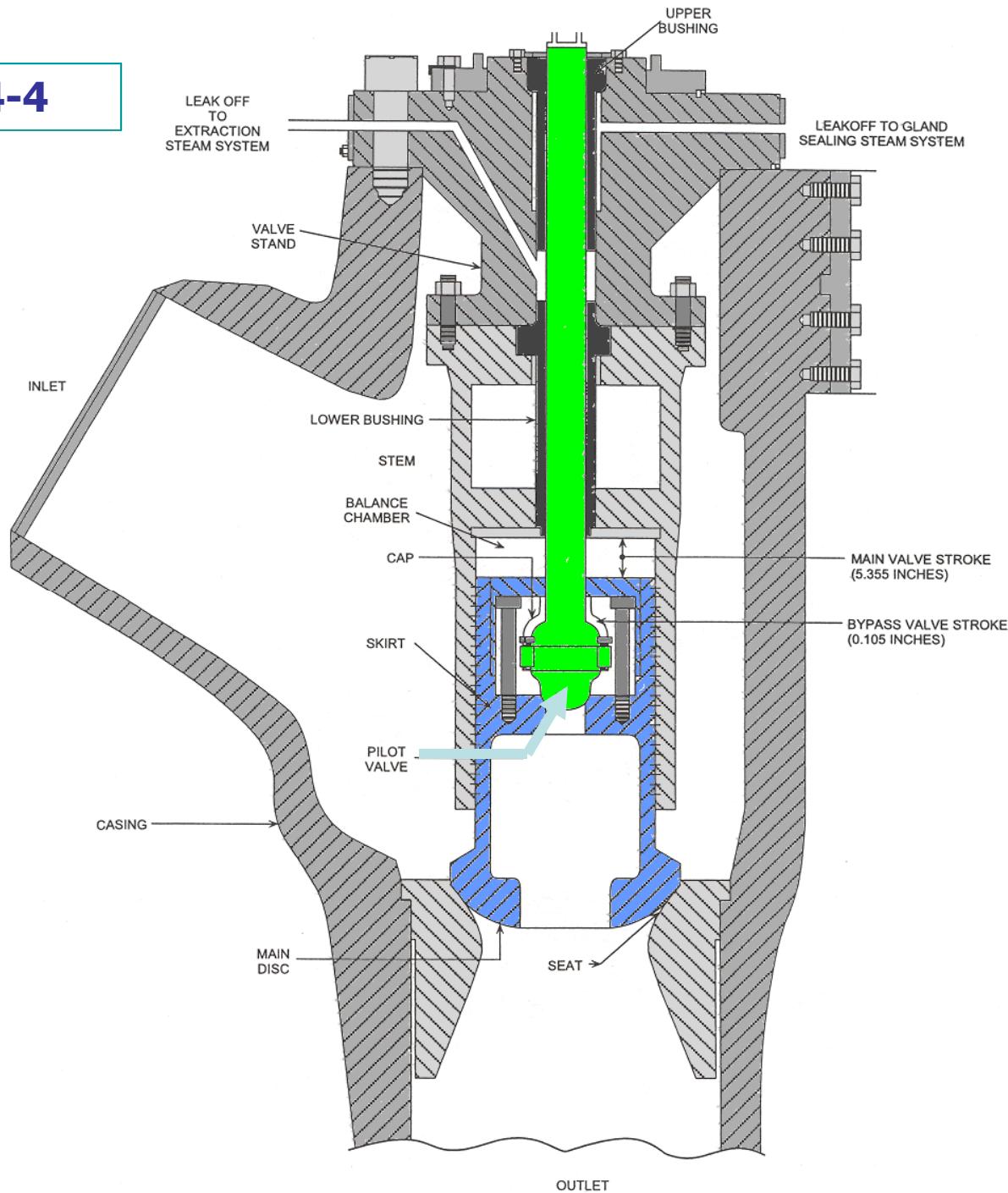
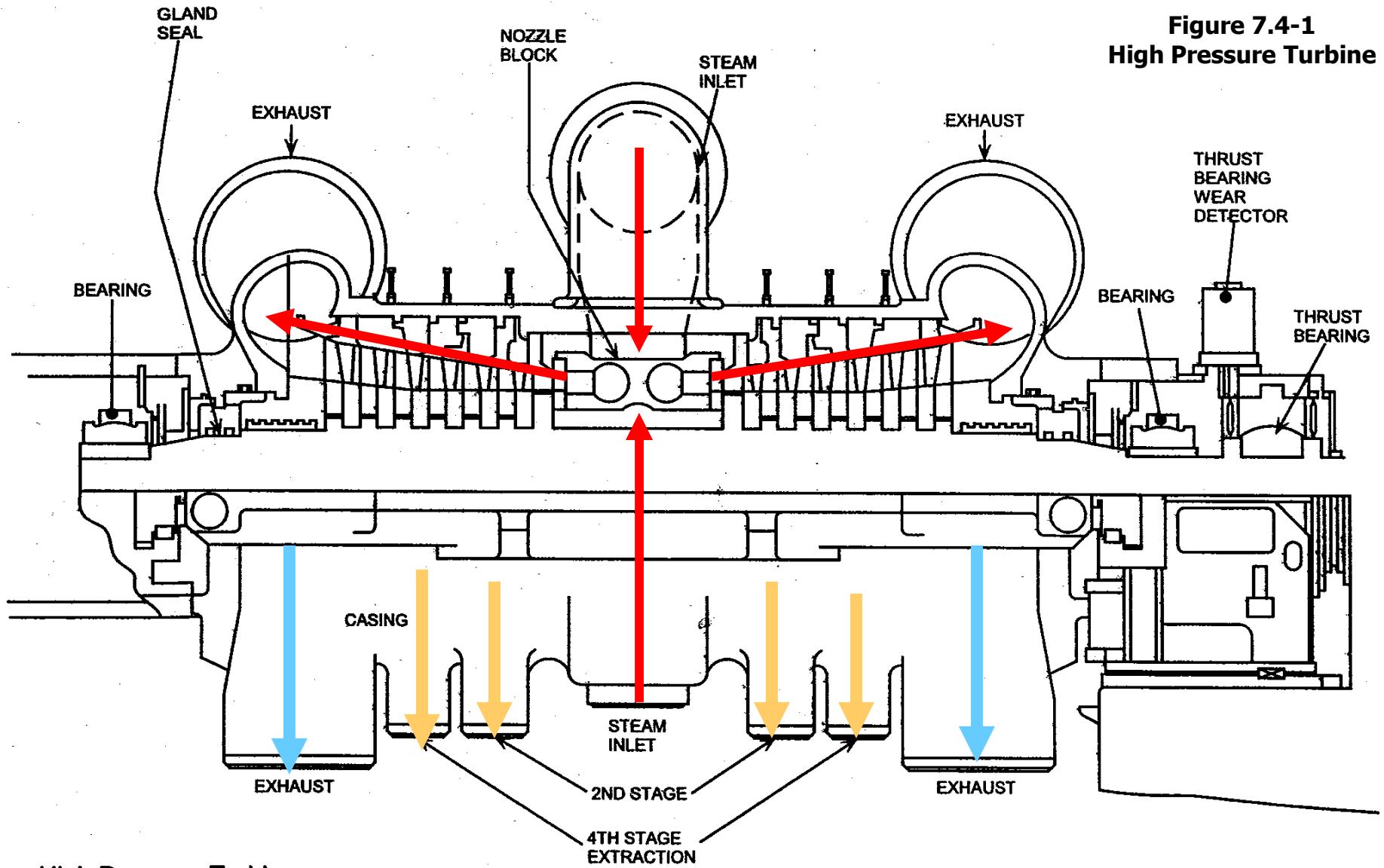


Figure 7.4-1
High Pressure Turbine



High Pressure Turbine

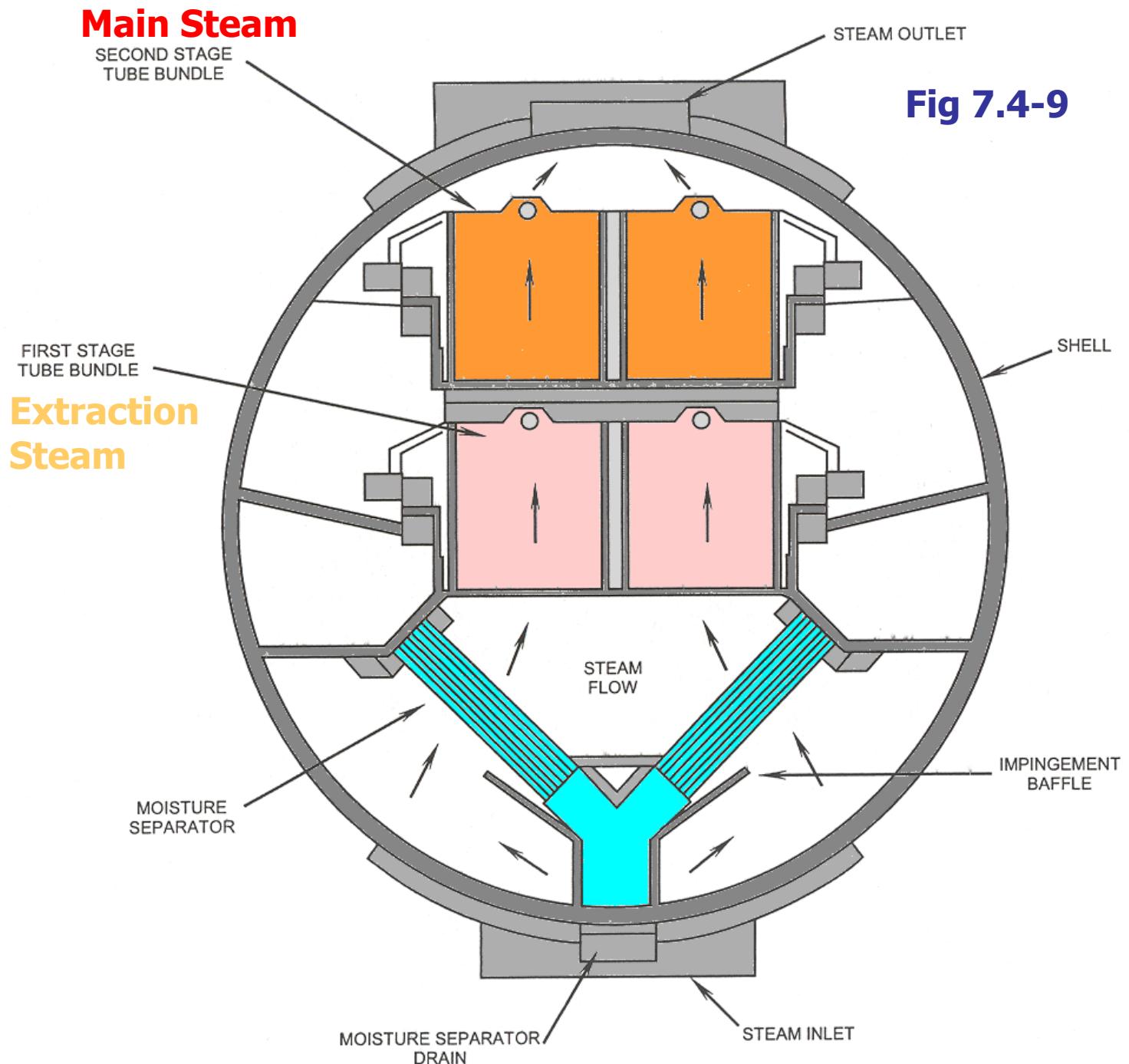
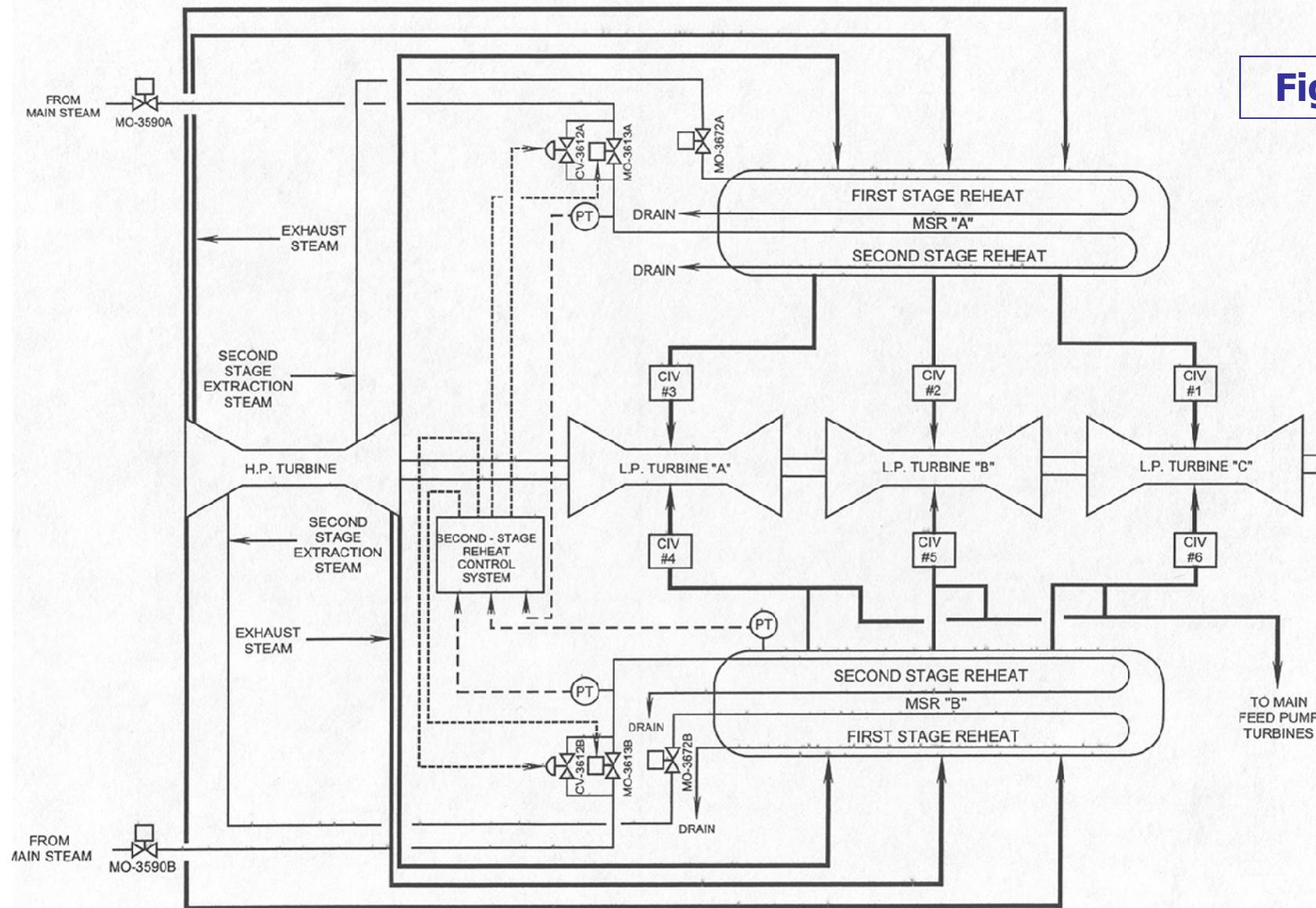


Fig 7.4-9



Fig 7.4-2

OBJ-2



CIV (7.4.2.2)

Purposes:

- Shut when turbine trips to provide redundant isolation of the LP turbines from the reheat steam (MSRs).
- Intercept valves will also operate to prevent turbine overspeed on turbine trip or load rejection.

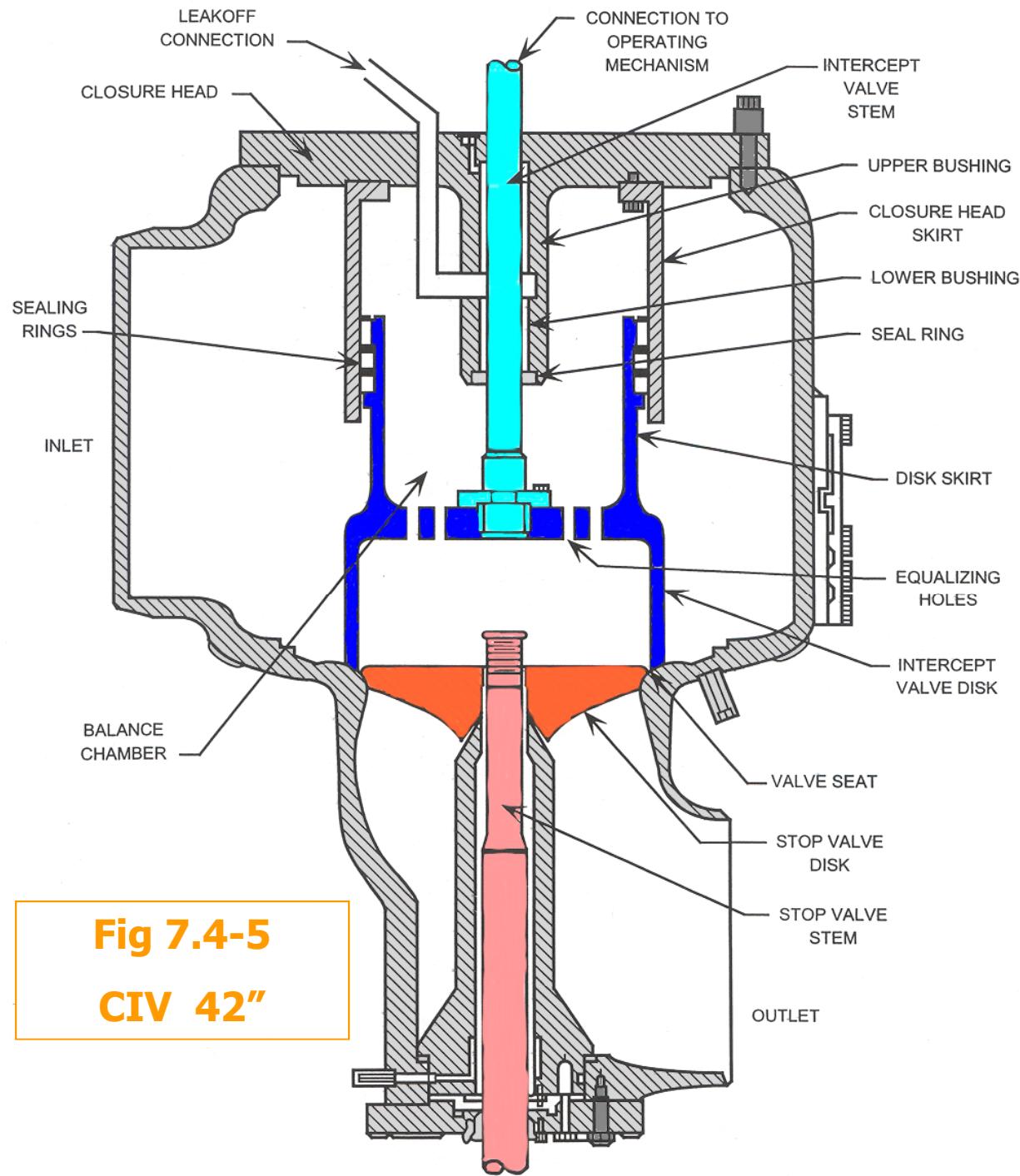


Fig 7.4-5
CIV 42"

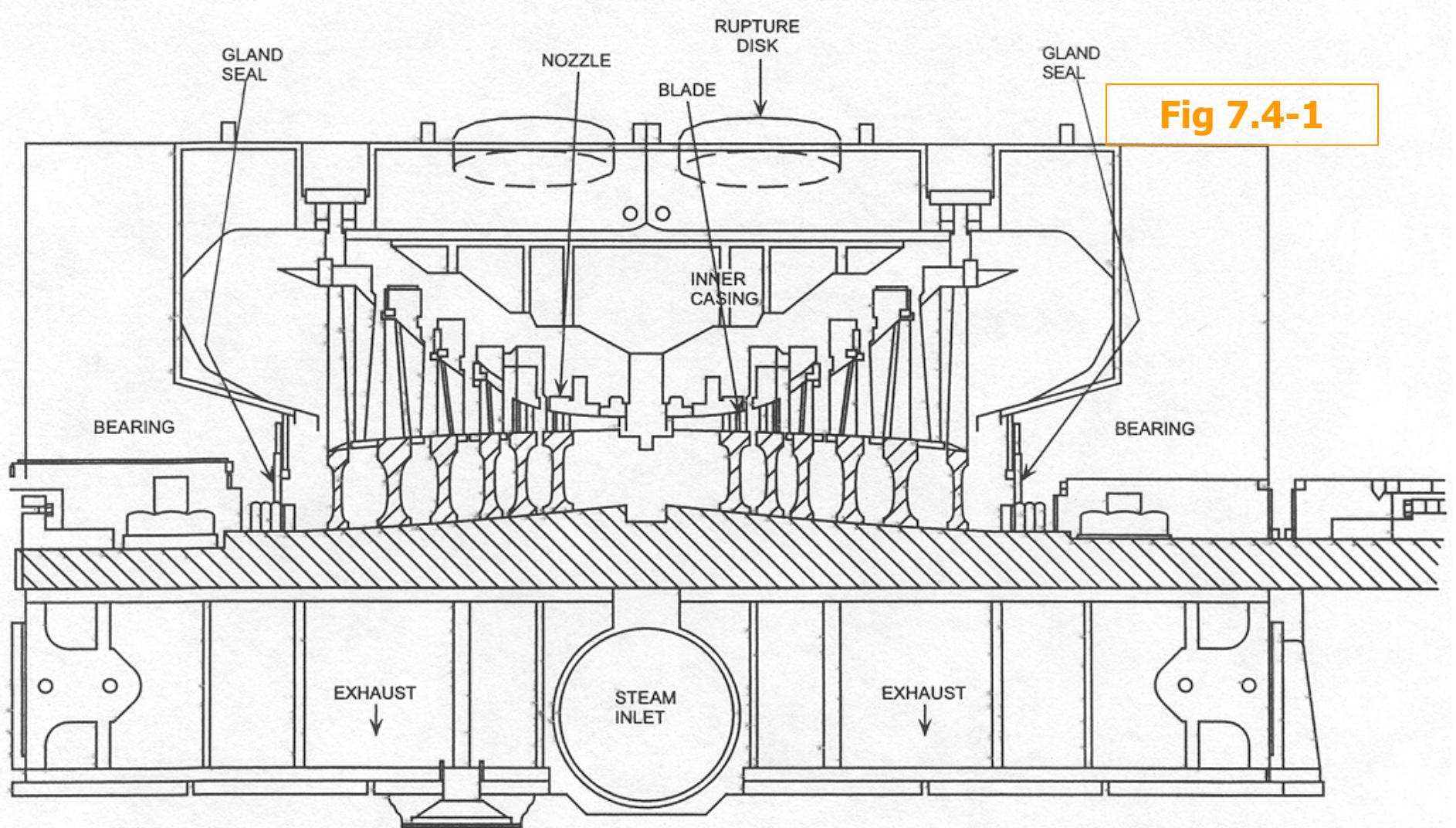


Fig 7.4-1

Low Pressure Turbine

To Main Condenser



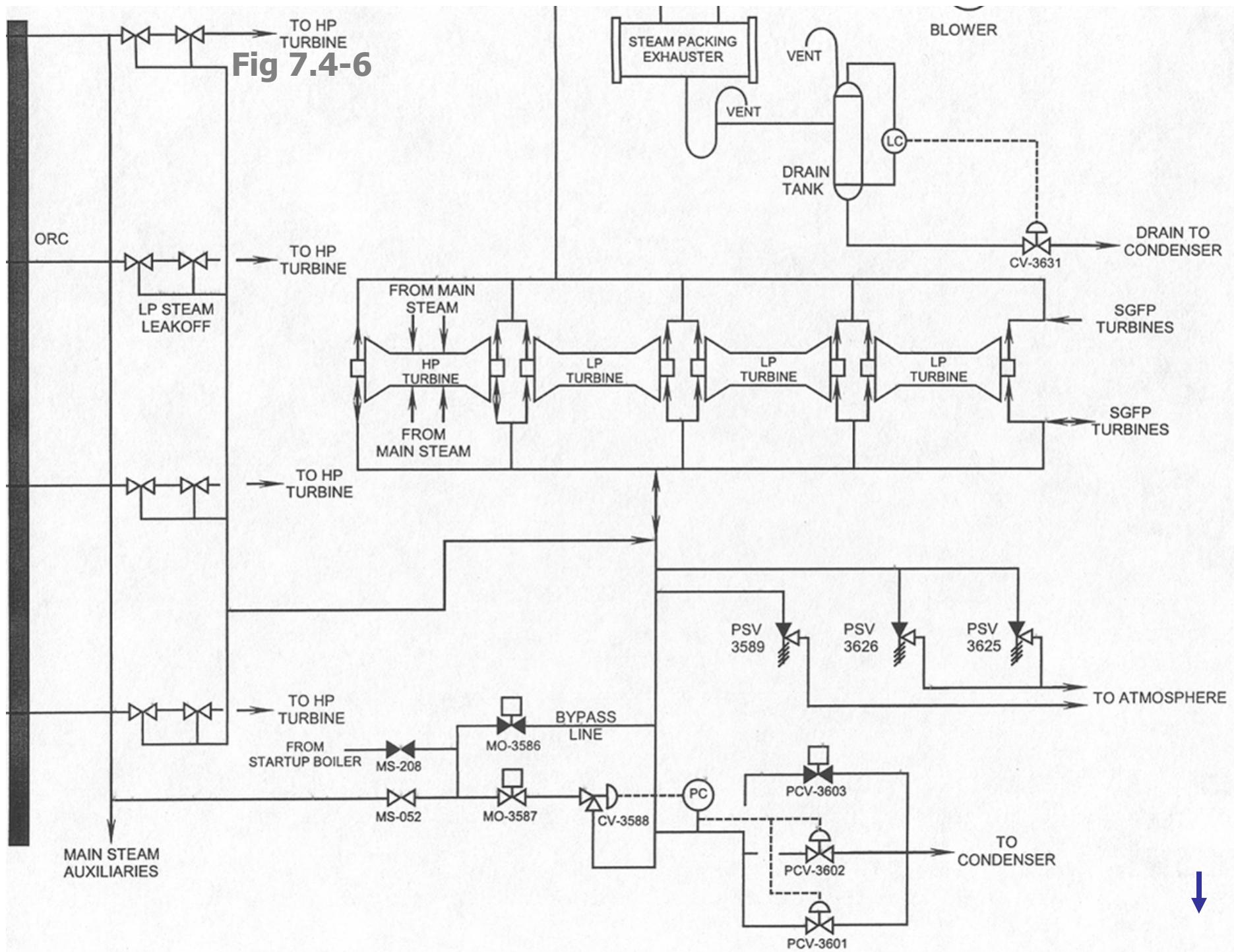


Fig 7.4-7

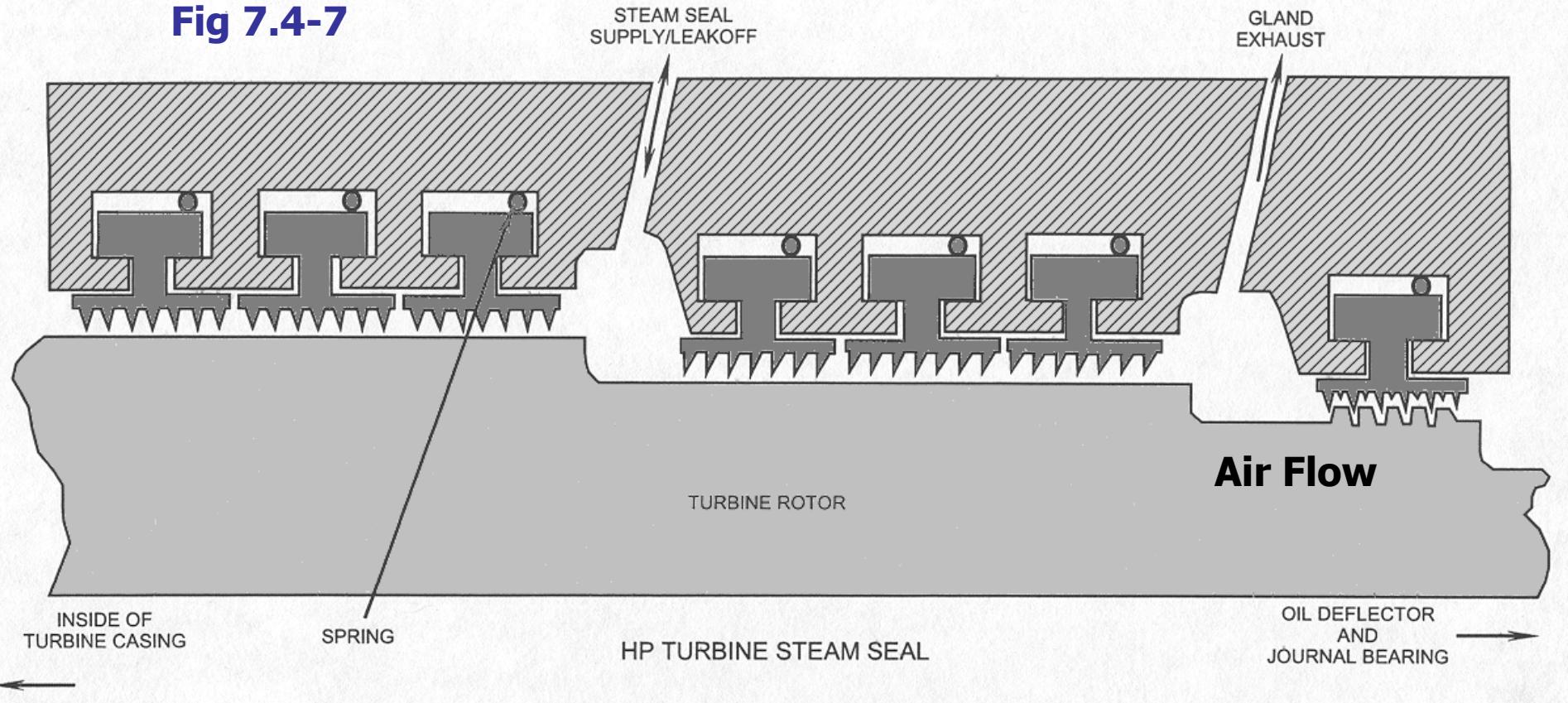


Fig 7.4-7

